## **CLAIMS**

- 1. Hydrophilic polypeptide of *Eimeria* characterised in that said polypeptide is an SOD-like polypeptide, has a molecular weight of 25 kD and comprises an amino acid sequence that shares at least 70 % homology with the amino acid sequence as shown in SEQ ID NO: 1: or an immunogenic fragment of said polypeptide capable of inducing an immune response against said polypeptide.
- 2. Hydrophilic polypeptide of *Eimeria* characterised in that said polypeptide is a peroxidoxin-like polypeptide, has a molecular weight of 22 kD and comprises an amino acid sequence that shares at least 70 % homology with the amino acid sequence as shown in SEQ ID NO: 2:, or an immunogenic fragment of said polypeptide capable of inducing an immune response against said polypeptide.
- 3. Hydrophilic polypeptide of *Eimeria* characterised in that said polypeptide is a peroxidoxin-like polypeptide, has a molecular weight of 25 kD and comprises an amino acid sequence that shares at least 70 % homology with the amino acid sequence as shown in SEQ ID NO: 3:, or an immunogenic fragment of said polypeptide capable of inducing an immune response against said polypeptide.
- 4. Hydrophilic polypeptide of *Eimeria* characterised in that said polypeptide has a molecular weight of 22 kD and comprises an amino acid sequence that shares at least 70 % homology with the amino acid sequence as shown in SEQ ID NO: 4:, or an immunogenic fragment of said polypeptide capable of inducing an immune response against said polypeptide.
- 5. Hydrophilic polypeptide of *Eimeria* characterised in that said polypeptide is a triosephosphate isomerase-like polypeptide, has a molecular weight of 28 kD and comprises an amino acid sequence that shares at least 70 % homology with the amino acid sequence as shown in SEQ ID NO: 5:, or an immunogenic fragment of said

polypeptide capable of inducing an immune response against said polypeptide.

- 6. Hydrophilic polypeptide of *Eimeria* characterised in that said polypeptide is a polypeptide that has a molecular weight of 28 kD and comprises an amino acid sequence that shares at least 70 % homology with the amino acid sequence as shown in SEQ ID NO: 6:, or an immunogenic fragment of said polypeptide capable of inducing an immune response against said polypeptide.
- 7. Hydrophilic polypeptide of *Eimeria* according to claims 1-6, characterised in that the homology is 100%.
- 8. Hydrophilic polypeptide according to claims 1-7, characterised in that the *Eimeria* is *Eimeria tenella*.
- 9. DNA fragment comprising a nucleotide sequence encoding a hydrophilic polypeptide or an immunogenic fragment of said polypeptide, according to claims 1-8.
- 10. DNA fragment according to claim 9, characterised in that it comprises a nucleic acid sequence as depicted in SEQ ID NO: 39: or a fragment thereof
- 11.DNA fragment according to claim 9, characterised in that it comprises a nucleic acid sequence as depicted in SEQ ID NO: 40: or a fragment thereof
- 12.DNA fragment according to claim 9, characterised in that it comprises a nucleic acid sequence as depicted in SEQ ID NO: 41: or a fragment thereof
- 13. Recombinant DNA molecule comprising a DNA fragment according to claims 9-12.
- 14. Live recombinant carrier comprising a DNA fragment according to claims 9-12 or a recombinant DNA molecule according to claim 13.

- 15. Host cell comprising a DNA fragment according to claims 9-12, a recombinant DNA molecule according to claim 13 or a live recombinant carrier according to claim 14.
- 16. Vaccine capable of protecting poultry against *Eimeria* infection, characterised in that it comprises a hydrophilic polypeptide according to claims 1-8, a DNA fragment according to claims 9-12, a Recombinant DNA fragment according to claim 13, a live recombinant carrier according to claim 14 or a host cell according to claim 15 and a pharmaceutically acceptable carrier.
- 17. Vaccine according to claim 16, characterised in that it additionally comprises an adjuvant.
- 18. Vaccine according to claim 16 or 17, characterised in that it comprises an additional immunogen derived from a poultry pathogenic virus or micro-organism.
- 19. Vaccine according to claim 18, characterised in that the immunogen is selected from the group of poultry pathogenic viruses or micro-organisms consisting of Marek's Disease virus (MDV), Newcastle Disease virus (NDV), Infectious Bronchitis virus (IBV), Chicken Anaemia Agent (CAA), Reo virus, Avian Retro virus, Fowl Adeno virus, Turkey Rhinotracheitis virus, *Salmonella* spp. or *E. Coli.*
- 20. Vaccine according to claims 16-19, characterised in that it is in a freeze-dried form.
  - 21. An antibody raised against a polypeptide according to claims 1-8.
- 22. Method for the preparation of antibodies against a polypeptide according to claims 1-8, characterised in that said method comprises administering said polypeptide to a suitable animal.

- 23. Method for the preparation of a vaccine for combating *Eimeria* infections, characterised in that said method comprises admixing a polypeptide according to claims 1-8, a DNA fragment according to claims 9-12, a Recombinant DNA fragment according to claim 13, a live recombinant carrier according to claim 14 or a host cell according to claim 15 with a pharmaceutically acceptable carrier.
- 24. Method for the preparation of a vaccine for combating *Eimeria* infections, characterised in that said method comprises admixing antibodies according to claim 21 with a pharmaceutically acceptable carrier.
- 25. Method for the detection of *Eimeria* parasites in poultry, characterised in that said method comprises incubating a DNA preparation isolated from poultry with a DNA fragment according to claims 9-12.
- 26. Method for the detection of antibodies against *Eimeria* parasites in poultry serum, characterised in that said method comprises incubating said serum with the hydrophilic polypeptide according to claims 1-8.